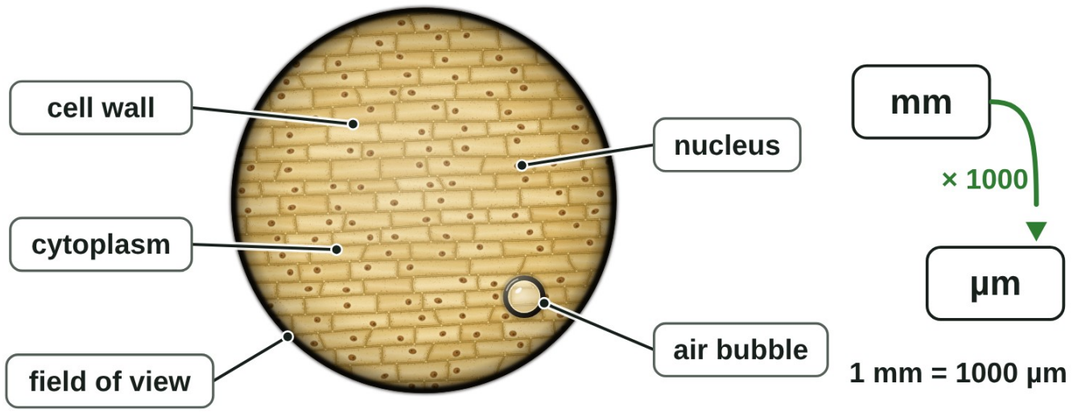
B1 L4 Alternative worksheet: Magnification and cell size

Name: _____ Class: _____

Key facts

- Cells are tiny. We measure them in **micrometres (μm)**.
- 1 mm = 1000 μm. 1 μm = 1000 nm.
- **Magnification** is how many times bigger the image is than the real object.
- magnification = size of image ÷ size of real object
- Magnification has no unit. We write it like this: **× 100**.
- The **real size** is smaller than the image.
- A **scale bar** is a line on a picture that shows a real length.
- The **field of view** is the circle you can see when you look down a microscope.

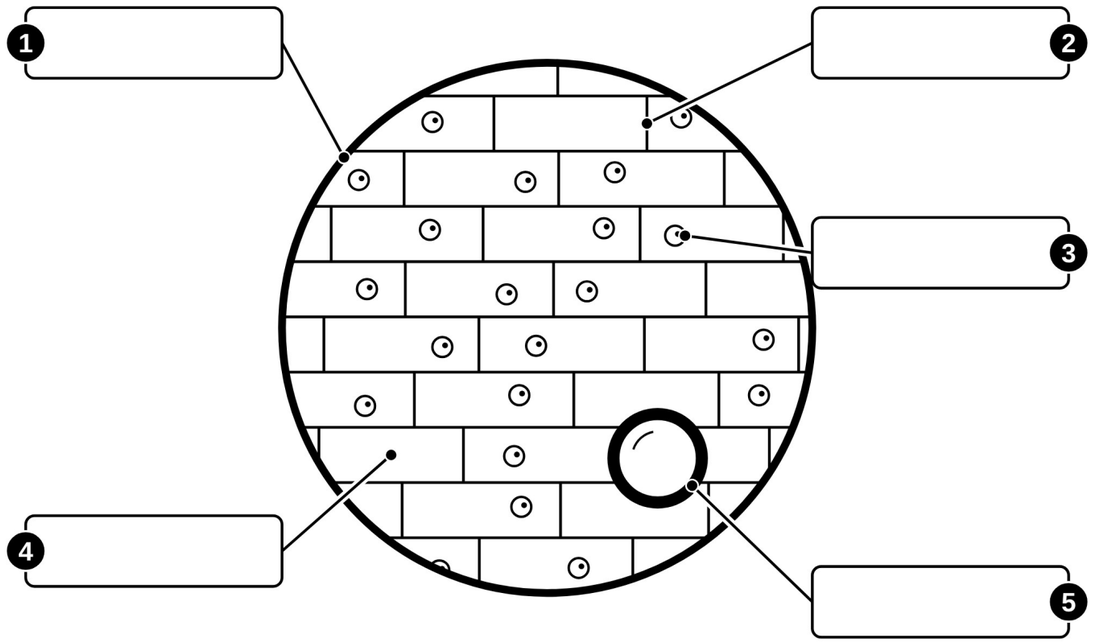


The view at × 100, and the units staircase.

A. Label the view down the microscope [5]

Write a word from the box in each label box. Help: online screens 1 and 2

air bubble	**cell wall**	**cytoplasm**
field of view	**nucleus**	



Tip: the air bubble is not a cell.

B1 L4 Alternative worksheet: Magnification and cell size

Name: _____ Class: _____

B. Match the word to its meaning

Help: online screens 3, 4, 9 and 10 [5]

Draw a line from each word to its meaning.

micrometre (µm)	a line on a picture that shows a real length
nanometre (nm)	one thousandth of a millimetre
magnification	how many times bigger the image is than the real object
scale bar	the circle you can see when you look down a microscope
field of view	one thousandth of a micrometre

C. Fill the gaps

Help: online screens 3, 4 and 6 [6]

Use the words in the box. Use each word once.

1000	**bigger**	**divide**	**multiply**	**smaller**	**unit**

1. One millimetre is the same as _____ micrometres.
2. To change mm into µm, you _____ by 1000.
3. To change µm into mm, you _____ by 1000.
4. Magnification has no _____.
5. The image is _____ than the real object.
6. The real cell is _____ than its image.

D. True or false?

Help: online screens 2, 3, 4 and 9 [6]

Tick (✓) True or False for each sentence.

Sentence	True	False
1. 1 mm is bigger than 1 µm.		
2. Magnification is measured in mm.		
3. × 100 means the image is 100 times bigger than the real object.		
4. A biological drawing should include the air bubbles.		
5. A scale bar shows a real length.		
6. 1 µm is the same as 100 nm.		

E. Work it out

Help: online screens 3, 4 and 6 [5]

1 mm = 1000 µm. Fill in each answer.

1. 7 mm = _____ µm
2. 5000 µm = _____ mm
3. A drawing of a cell is 20 mm long. The magnification is × 100.
   Real size = 20 ÷ 100 = _____ mm
4. Change your answer to question 3 into µm: _____ µm
5. An image is 30 mm long. The real object is 3 mm long.
   Magnification = 30 ÷ 3 = × _____